Innovation worksheet

Innovation is about how your *way* of solving the problem (or filling a gap in knowledge) is new and is useful. For example, if the problem your studies will solve is that children are not reading by 3rd grade, and the approach you choose to take is to give students additional reading homework each night, that is not innovative. If the approach you choose to take is to bring puppies into the classroom and let children read to them, that is innovative (or course you need a rationale for why the puppies will work, but that is a different topic.)

The Innovation section does not repeat the Significance or the Approach.

These prompts are designed to help you think about the ways in which a project could be considered ‘innovative’.

Consider each prompt below; if the answer is ‘yes’, write your answer below the question.

After you have done this you will (probably) detect a natural grouping for your answers.

When you write your Innovation section, make sure you start by providing enough context/background so that the reviewer can understand how your innovation(s) is important to your field. Probably 4-10 lines.

N.B. Make sure to weave your points of innovation into your Specific Aims page.

# Prompts

Is this the first time this question has been addressed, or the first time this question has been addressed in your system/model/disease?

Have you proposed a new mechanistic hypothesis (or a hypothesis that is novel is some other way)?

Do you have data that suggests the involvement of factors that others had not appreciated?

Has some advance happened recently that makes your solution likely to work?

Does your solution use new enabling ideas or technologies?

Is your overall approach new for your field, or new entirely?

Are you combining existing approaches in a new way?

Have you put together a multi-disciplinary team that has a history of working together to address this question (typically a good thing to be able to say)?

Have you developed, or do you have access to, unique resources? (e.g., unusual multi-disciplinary teams, unique samples, unique opportunities, unique patient populations)

Are you enhancing an existing model or technology?

Have you improved an existing concept, method, instrument or clinical intervention?

Have you developed a new application for an existing method, or instrumentation, or clinical intervention?

## NIH Instructions (For R01-type grant)

* Explain how the application challenges and seeks to shift current research or clinical practice paradigms.
* Describe any novel theoretical concepts, approaches or methodologies, instrumentation or interventions to be developed or used, and any advantage over existing methodologies, instrumentation, or interventions.
* Explain any refinements, improvements, or new applications of theoretical concepts, approaches or methodologies, instrumentation, or interventions.

## NIH Evaluation Criteria

* Does the application challenge and seek to shift current research or clinical practice paradigms by utilizing novel theoretical concepts, approaches or methodologies, instrumentation, or interventions?
* Are the concepts, approaches or methodologies, instrumentation, or interventions novel to one field of research or novel in a broad sense?
* Is a refinement, improvement, or new application of theoretical concepts, approaches or methodologies, instrumentation, or interventions proposed?

# Outlines I have seen

## Outline one

1. How is this question innovative (if applicable)? Provide background/context about:
   1. how has the question has never been answered
   2. why it is critical to answer it now
2. Your innovation - What do you uniquely possess that allows you to be unique in your ability to answer this question? This can be many things – new data, a new hypothesis, a new concept, a new reagent, new method, old method newly applied; can separate this into
   1. Conceptual innovation (and what is new about it)
   2. Technical innovation (and what is new about it)
3. How you or your Team is the best to answer the question

## Outline two

1. Describe status quo
2. Describe how what/how you are doing is a new and substantial departure from status quo
3. Describe what is new and different about it (i.e. how it departs from status quo)
4. Quickly remind reader what your departure from status quo enables

## Outline three

1. Status of the field / current norm that shows how your question is innovative. Provide background/context about:

* How/why has the question has never been answered
* why it is critical to answer it now

1. Your innovation - What do you uniquely possess that allows you to be unique in your ability to answer this question? This can be many things – new data, a new hypothesis, a new concept, a new reagent, new method, old method newly applied. Sometime people separate into:

* Conceptual innovation
* Technical innovation

1. Why you are the best person/team to answer the question